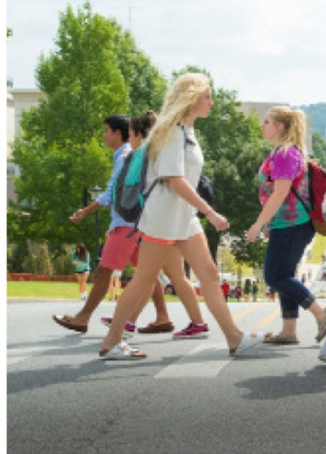




2019



Undergraduate

STUDENT HANDBOOK

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MESSAGE FROM THE DEPARTMENT HEAD



MICAH HALE, PH.D., P.E.
PROFESSOR; DEPARTMENT HEAD;

Welcome to the University of Arkansas and congratulations on selecting Civil Engineering for your major. You have joined an exceptional Civil Engineering program and are embarking on an exciting adventure that will lead to a rewarding and enjoyable professional career.

The faculty, staff and I are here to help you. We will try to provide you the best engineering education possible. You will undoubtedly encounter difficult times and problems while pursuing your education. When you do, remember that we are here to help. Come to us. Ask our advice. Ask for our help. We will do what we can to assist you in solving the difficulties that can impede your progress to becoming an engineer.

This handbook provides our first assistance to you. This STUDENT HANDBOOK is a map to lead you on your adventure. It outlines the course of study required for receiving the Bachelor of Science in Civil Engineering degree. READ THIS DOCUMENT CAREFULLY. Become familiar with the policies, procedures and course requirements. Used properly, this guide will help you complete your course of study with a minimum of problems.

The faculty, staff, and I are glad you chose us. We pledge to do what we can to assist you over the next few years in gaining a sound, fundamental understanding of civil engineering. Good luck and enjoy the adventure.

Sincerely,

A handwritten signature in black ink, appearing to read "Micah Hale", written in a cursive style.

Micah Hale, Ph.D., P.E.
Professor and Department Head

MEET THE FACULTY

ENVIRONMENTAL



FINDLAY EDWARDS



JULIAN FAIREY



RODNEY WILLIAMS



WEN ZHANG

GEOTECHNICAL



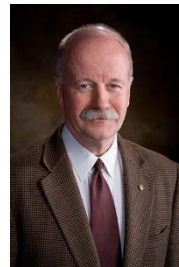
MICHELLE BERNHARDT



RICK COFFMAN



NORM DENNIS



MIKE JOHNSON



CLINT WOOD

STRUCTURAL



MICAH HALE



ERNIE HEYMSFIELD



GARY PRINZ



PANNEER SELVAM



CAMERON MURRAY

TRANSPORTATION



NATALIE BECKNELL



ANDREW BRAHAM



SUMAN MITRA



KEVIN HALL



SARAH HERNANDEZ



STACY WILLIAMS

PROGRAM OBJECTIVES

Summary of Important Items:

1. Read this *Undergraduate Student Handbook* thoroughly. It will save you time and confusion later.
2. READ THE UNIVERSITY OF ARKANSAS *UNDERGRADUATE STUDIES CATALOG!* (NOTE: Some recent changes may not be in the catalog. This edition of the *Undergraduate Student Handbook* contains more up-to-date information.)
3. No student will be allowed to graduate if they have “D” grades in more than 8 hours of coursework presented to meet the requirements for a degree.
4. No courses having a grade of “D” can be transferred into our program.
5. You must finish with a minimum GPA of 2.0 to graduate.
6. Each student is entitled to one free copy of the *Undergraduate Studies Catalog* from the Admissions Office. Additional copies must be purchased.

UNDER GRADUATE

The objective of the Civil Engineering undergraduate program is to produce graduates who are:

- Employable as entry level engineers in any of the following fields:
 - Foundations, earthwork, and embankment design and analysis
 - Water, wastewater, and waste handling and treatment
 - Highway facility design and operation
 - Elementary structural design
- Prepared to pursue an advanced civil engineering education.

Assessment

Undergraduate students are required to take at least two courses in each of the fields described above. Graduates should have at least a rudimentary, working knowledge of the subjects basic to those fields. The degree of success in meeting the undergraduate objective is assessed through:

- Performance in the required Civil Engineering design electives series
- Interview with the Department Head (or representative) prior to graduation in which the student’s ability to converse on the subjects will be assessed, and the number of students hired for engineering positions or enrolling in graduate programs will be determined.
- Results from the NCEES Fundamentals of Engineering Exam

GRADUATE

The objective of the Civil Engineering graduate program is to provide students with an advanced understanding and knowledge of the subjects basic to chosen fields.

The degree of success in meeting the graduate objective is assessed through:

Assessment

The success in meeting this objective is assessed by:

- The quality of each student’s thesis, dissertation, or Master’s research report as determined by the student’s graduate study committee.
- A comprehensive examination, either oral or written, to be administered by the student’s graduate study committee prior to graduation.

INFORMATION HIGHLIGHTS

YOUR ADVISOR

During your freshman year, your adviser will be associated with the Freshman Engineering Program. (See Appendix C for a brief description or the Catalog of Studies for a complete description of the College of Engineering Freshman Engineering Program.) Beginning with your sophomore year, you will be assigned a Civil Engineering faculty member as an adviser. He or she will assist you in establishing your program of study leading to a BSCE (Bachelor of Science in Civil Engineering) degree. As a student, you are responsible for contacting your adviser each semester to update your records and to plan your next semester's schedule. The best time to do this is during preregistration. Always bring your *Undergraduate Student Handbook* with you when contacting your adviser about your schedule or course changes. Your adviser's responsibility is to be available during pre-registration and registration periods to assist you with your scheduling problems. Please respect your adviser's schedule by contacting him or her during office hours and do not wait until the last day of a critical time period to contact him or her.

THE CIVIL ENGINEERING CURRICULUM

The Civil Engineering curriculum has been developed to provide a balanced educational program to meet requirements of the Engineering Accreditation Commission (EAC) of ABET, Inc.—see pages 20-21 for more information about ABET-accreditation. Therefore, when scheduling courses, it is essential that you have the proper prerequisites. While your adviser will help you make scheduling decisions, it is your responsibility to check to see that you have the proper prerequisites for the required and elective courses. **If a course is listed as a prerequisite for another course you must make a grade of C or better to progress.** Note that if courses are listed as co-requisites, the higher level course will have to be dropped if the lower-level course is dropped. Transfer students should complete all basic course deficiencies in their first semester of enrollment. The blank spaces associated with each course on the Degree Check List (see Appendix E., pages 30-31) should be kept up to date with the proper semester and grades inserted before you see your adviser for class scheduling. An electronic/interactive version of the course flow chart & degree checklist may be supplied to you by request.

THE CURRICULUM CONTRACT

The listing of courses contained in any University bulletin, catalog, or schedule is by way of announcement only and shall not be regarded as an offer of contract. The University expressly reserves the right to 1) add or delete courses or programs from its offerings, 2) change times or locations of courses or programs, 3) change academic calendars without notice, 4) cancel any course for insufficient registrations, or 5) revise or change rules, charges, fees, schedules, courses, requirements for degrees and any other policy or regulation affecting students, including, but not limited to, evaluation standards, whenever the same is considered to be in the best interests of the University of Arkansas. Students reinstated after a period of absence while on suspension or leave without continuous enrollment must meet the curriculum requirements of the catalog in effect at the time of reinstatement. You should select the contract curriculum before scheduling a degree check. Co-op students are considered to be continuously enrolled if they register for one credit of GNEG 2801, 3801, or 4801 during their work period.

SUBSTITUTIONS AND EXCEPTIONS

Your adviser has the authority and responsibility, subject to approval by the Department Head, Undergraduate studies Coordinator (Dr. Rod Williams), or the Engineering Dean's Office, to make substitutions that are necessary because required courses may not be available when you are expected to take them. Evaluations of transfer credit for courses taken at other colleges and universities will be made by the Department Head or Undergraduate Studies Coordinator before an adviser is assigned (see Section 6).

ACADEMIC STANDARDS

Academic standards and regulations are detailed explicitly in the *Undergraduate Studies Catalog*. If your grades fall below minimum levels, you may be placed on warning or academic probation. This serves as a warning that better grades must be earned or you may be suspended from your academic program or dismissed from the University of Arkansas. Care must be taken that enrollment is planned in appropriate study programs while working with your adviser. All courses with an "F" grade must be repeated to build a better foundation before scheduling more advanced courses. Also, no more than 8 hours earned at the University of Arkansas at Fayetteville and presented for graduation can have "D" grades.

ACADEMIC ETHICS

Each student is responsible for doing his or her own work and for using only the approved materials and procedures when completing homework assignments and taking exams. The POLICY ON ACADEMIC ETHICS (Appendix B, pages 26-27) describes the College of Engineering policy regarding ethical conduct in academic affairs.

ACADEMIC ADVISING AND REGISTRATION

At the beginning of the sophomore year, each student is assigned an adviser to help select courses that fit within the required program of study and to assure that courses are taken in the appropriate sequence. Prior to registering for the next semester, you must schedule a meeting with your adviser to go over your progress-to-date and to select courses. During your visit, your adviser will clear you for registration via the Integrated Student Information System (UA Connect). Only your adviser can clear you for registration.

Do not wait until the last minute to see your adviser. While your adviser is more than willing to help you, you are not his/her sole obligation. Be considerate of your adviser's other responsibilities. Review the adviser's posted schedule and select a time in advance of your registration time that is convenient for both of you. Prior to seeing your adviser, you should do the following:

- Update your copy of the Civil Engineering Degree Check Form (see Appendix E, pages 30-31), ensuring that all course credits and grades earned are entered.
- Based upon the courses already completed for credit and the Course Flow Chart (see Appendix D, page 29) for a BSCE degree study program, make a trial section of courses. To test the effectiveness of the proposed program, you should note that a logical schedule for a given semester approximates a vertical line on the flow chart. Also, make sure the uncompleted courses lying to the left of the vertical line receive scheduling priority.
- Using UAConnect, access the Schedule of Classes and prepare a trial schedule that might fit your particular needs. The UAConnect system can be found on the web at

<http://uaconnect.uark.edu>. Instructions for use of UAConnect can be found on the web at <http://www.uark.edu/admin/isisdir/pages/students.htm> and are also available from the Civil Engineering Department. Be aware that an 18-hour course load is the normal maximum permitted. Under extraordinary circumstances, 19 to 21 hours may be taken with permission from the adviser, Department Head, and Engineering Dean's Office. An overload form is available in the Civil Engineering Office at 4190 BEC.

- Schedule a meeting with your adviser. You must meet with your adviser to be able to be cleared for registration; if you attempt to register before having your advising hold removed, you will not be allowed to register.

REGISTRATION

The University requires students to use UAConnect to view the schedule of classes and to register for classes. For further assistance you can go to the Registrar's Office at 46 Silas Hunt Hall or call 575-5451. You can also email the Registrar's Office with any questions at www.uark.edu/registrar.

SCHEDULE CHANGES AND DROP/ADD POLICY

Students can make adjustments to their schedules using UAConnect up through the first week of classes (see the Academic Calendar in Appendix A on page 23-25 for dates). After the first week of classes only course drops will be approved. No grades will be recorded for courses dropped during the first 10 days of classes. Drops after the first 10 days of classes and before the last approved drop date (approximately the 40th day of classes) in each semester will be graded W (Withdraw) on the student's permanent record. No drops will be accepted after the approved last drop date of each semester (see the Academic Calendar on page 23-25 for exact add/drop dates). Failure to complete a course automatically denotes an "F" grade unless an incomplete "I" grade is warranted. "I" grades are converted to "F" grades if not completed within 12 weeks from the beginning of the next semester of the student's enrollment after receiving the "I".

CHANGING MAJORS

If you are thinking about switching your major to another department within the College of Engineering, first talk to your adviser. He/she may suggest that you talk to people in student counseling who would be able to assist in vocational testing and sorting out your interests and aptitudes. If you decide to transfer out of Civil Engineering, you should complete a Change of Major/College form that will authorize a transfer of your personal records to your new department and will alert the Dean's Office to your new curricular study. A transcript evaluation is necessary upon transfer into the Department of Civil Engineering to determine the suitability of credit for courses already completed.

BSCE HONORS PROGRAM

Students enrolled in the Honors College who are to receive the BSCE degree must complete a minimum of 12 hours of honors credit. At least 6 hours must be completed within the Civil Engineering program, including at least 3 hours resulting in an Honors Thesis. The CVEG Honors courses are acceptable as technical electives. The following CVEG courses are offered for honors credit:

- **CVEG 491V H—Honors Studies in Geotechnical Engineering (1-6)**
The study of advanced topics in the geotechnical engineering field may include participation in geotechnical engineering courses normally available only to graduate students. Course may be repeated for up to 6 hours total credit with the approval of the CVEG honors adviser. Co-requisites: CVEG 3133 and enrollment in the Honors College.
- **CVEG 492V H—Honors Studies in Environmental Engineering (1-6)**
The study of advanced topics in the environmental engineering field may include participation in environmental engineering courses normally available only to graduate students. Course may be repeated for up to 6 hours total credit with the approval of the CVEG honors adviser. Co-requisites: CVEG 3243 and enrolled in the Honors College.
- **CVEG 493V H—Honors Studies in Structural Engineering (1-6)**
The study of advanced topics in the structural engineering field may include participation in structural engineering courses normally available only to graduate students. Course may be repeated for up to 6 hours total credit with approval of the CVEG honors adviser.
Co-Requisites: CVEG 3304 and enrolled in the Honors College.
- **CVEG 494V H—Honors Studies in Transportation Engineering (1-6)**
The study of advanced topics in the transportation engineering field may include participation in geotechnical engineering courses normally available only to graduate students. Course may be repeated for up to 6 hours total credit with the approval of the CVEG honors adviser.
Co-requisites: CVEG 3413 and enrollment in the Honors College.
- **CVEG 4983 H—Undergraduate Honors Thesis (1-6)**
Prerequisites: enrolled in the Honors College.

ELECTIVE COURSES

TECHNICAL ELECTIVES

Students must select three 3-hour civil engineering elective courses in conference with their adviser. Normally, civil engineering electives are selected among the 4000-level CVEG courses. Exceptional students may be allowed to choose from the 5000 (graduate-level) course series. In order to take graduate-level courses, the student must have senior standing, a grade point average of 2.7 or higher, and instructor permission. NOTE: Students wishing to complete the Structural Design Project (CVEG 4832) must complete Structural Steel Design (CVEG 4313) as a pre-requisite, and enroll in Structural Loadings (CVEG 4323) as a Co-Requisite to CVEG 4832; thus, these courses (CVEG 4313 and CVEG 4323) may be used as two of the three technical electives.

STEM ELECTIVES

Students must also select one elective course from the fields of science, technology, engineering, or math (a “STEM” elective). The table which follows lists courses that may be taken as the STEM elective.

Courses Eligible for Science/Technology/Engineering/Math (STEM) Elective Credit

Geosciences

GEOS 2023 – Introduction to Cartography
 GEOS 3543/5543 - Geospatial Applications
 and Information Science (undergrad/grad)
 GEOS 4533 - Introduction to Petroleum
 Geophysics
*Prerequisite: MATH 2564, PHYS 2033, GEOS
 3543, or instructor consent*

General Engineering

GNEG 3113 – Study Abroad
 GNEG 3811 – Cooperative Education**
 ** must earn three (3) hours (3 co-op rotations) for
 credit towards BSCE

Computer Science and Computer Engineering

CSCE 2004 – Programming Foundations I

Math

Math 3083 - Linear Algebra
 Math 4363 - Numerical Analysis

Mechanical Engineering

MEEG 2013 – Dynamics
 MEEG 2403 – Thermodynamics
 MEEG 2703 – Computer Methods in Mechanical Engr

CIVIL ENGINEERING DESIGN ELECTIVES

Students must complete two of the following four CVEG design project electives: CVEG 4812(Environmental Design Project), CVEG 4822 (Geotechnical Design Project), CVEG 4832 (Structural Design Project), and/or CVEG 4842 (Transportation Design Project). Each design course elective is associated with a specific design oriented course. The associated course must be taken at the same time as the design oriented course. The associated courses may be taken alone, but the design electives cannot. Students must also take CVEG 4851 (Professional Practice Issues) in one of the semesters the student is taking a design elective.

HUMANITIES AND SOCIAL SCIENCES ELECTIVES

Each student in Civil Engineering is required to complete a minimum of 18 semester hours of humanities and/or social science course work as detailed on pages 14-15 the purpose of the requirement is to develop the general education of each engineering graduate to balance the preponderance of technical and scientific studies in engineering curricula. Eighteen hours are to be selected as electives from the following approved list (pages 14-15). The student with his/her adviser may select any of the humanities and social sciences on the approved list but must include one of the following courses: HIST 2003 (The American Republic), HIST 2013 (The United States as a World Power), or PLSC 2003 (American National Government) to meet the requirements of Arkansas law that each student pass a college course in

American history and civil government prior to graduation.

Rules for selecting courses are summarized below:

- The student **must** complete a history/political science elective
- History/political science elective should be HIST 2003, HIST 2103, or PLSC 2003
- In addition, 15 hours of humanities/social science electives **must** be completed according to the following rules:
- One course must be selected from fine arts, one course from humanities. List on p. 15
- Three courses (9 hours) must be selected from at least two different fields of Social Studies. For example no more than two social science courses can be selected from the same department. List on p. 14.

Fine Arts, Humanities 6 hours minimum (Select 3 hours from 2 of these categories, one being Fine Arts)

A) Fine arts:

- ARCH 1003 Architecture Lecture
- ARHS 1003 Art Lecture
- COMM 1003 Film Lecture
- DANC 1003 Basic/movement & Dance
- DRAM 1003 Theater lecture
- LARC 1003 Landscape architecture
- MLIT 1003 Music lecture
- MLIT 1013 Music lecture for music majors

B) Humanities

- PHIL 2003 Intro to philosophy
- PHIL 2103 Intro to ethics
- PHIL 2203 Logic
- PHIL 3103 Ethics and the professions

C) Humanities

- ARCH 1013 Diversity and Design
- CLST 1003 Intro to classical studies: Greece
- CLST 1013 Intro classical studies: Rome
- COMM 1233 Media, Community, and Citizenship
- HUMN 1114H Roots/cultures to 500 CE
- HUMN 1124H Equilibrium of cultures, 500 to 1600
- HUMN 1233 Honors Twentieth Century Global Culture
- WLIT 1113 World Literature I
- WLIT 1123 World Literature II

D) Humanities

Any intermediate foreign language (class number 2003) or

- HUMN 2003 Intro to gender studies
- HUMN 2203 Intro to religious Studies

Social Sciences (9 hours) Select from at least two different fields of study

- AGECE 1103 Intro to Agri Economics
- AGECE 2103 Principles of Agri Economics
- ANTH 1023 Intro to Cultural Anthropology
- COMM 1023 Communication in a diverse world

- ECON 2013 Principles of Macroeconomics
- ECON 2023 Principles of Microeconomics
- ECON 2143 Basic Economics
- GEOG 1123 Human Geography
- GEOG 2003 World Regional Geography
- HESC 1403 Life Span Development
- HESC 2413 Family Relations
- HIST 1113H Honors World Civilization I
- HIST 1123H Honors World Civilization II
- HIST 2003 History of the American People to 1877
- HIST 2013 History of the American People 1877 Present
- HUMN 1114H Honors Roots to Culture
- HUMN 2114H Honors Birth of Modern Culture 1600—1900
- PLSC 2003 American National Government
- PLSC 2013 Intro to Political Science
- PLSC 2203 State & Local Government
- PSYC 2003 General Psychology
- RESM 2853 Leisure and Society
- RSOC 2603 Rural Sociology
- SOCI 2013 General Sociology
- SOCI 2033 Social Problems

United States History - 3 hours minimum

- HIST 2003 History of American People to 1877
- HIST 2013 History of American People 1877 - present
- PLSC 2003 American National Government

TRANSFER FROM OTHER UNIVERSITIES

With proper planning it is possible to transfer essentially all the courses required for the first four semesters of study toward a BSCE degree, plus most of the non-technical electives. Transfer of courses taken at other institutions is subject to approval by the Dean of the College of Engineering and the Head of the Civil Engineering Department. Credit from other institutions will be approved on a course-by-course basis to ensure acceptability in fulfilling the degree requirements of our accredited BSCE program. No “D” grades may be transferred. In making a transfer evaluation, the student may be required to produce catalogs from the institution from which he/she is transferring or other documentation that contain descriptions of transfer courses for which credit is anticipated toward the BSCE degree.

Advanced engineering courses (3000 and 4000 level) normally may **not be** transferred from a non-ABET accredited institution. Some exceptions may be made on a case by case basis, providing the courses are completed at institutions having articulation agreements with the University of Arkansas, Fayetteville faculty.

TRANSFER PLANNING

The Civil Engineering Department at the University of Arkansas, Fayetteville recognizes the need for a number of students to transfer course credit from junior colleges and four-year colleges and universities. This practice is not discouraged and may be an effective means for students to complete the first two years of their program at a college or university near their hometown. However the civil engineering program at the University of Arkansas is fully accredited by the Engineering Accreditations Commission (EAC) of ABET, Inc. and adequate controls on transfer credit must be exercised to ensure the educational quality of degree programs deserving the ABET approval is maintained and, hopefully, exceeded.

To this end, the Policy on Transfer Credit (see Section 6b) has been established. Adjunct documents to this policy include Articulation Agreements that have been established between the department and colleges within Arkansas that offer courses potentially applicable to a degree in Civil Engineering. The schools for which Articulation Agreements have been established include:

- Northwest Arkansas Community College, Bentonville
- Crowder College, Neosho, MO
- Pulaski Technical College, Little Rock
- University of Central Arkansas, Conway
- University of Arkansas at Pine Bluff
- Philander Smith College, Little Rock
- Fort Valley State University, Fort Valley, GA

Students completing basic level courses at these or other institutions are encouraged to contact the Civil Engineering Department at University of Arkansas, Fayetteville, to obtain updates of these agreements and indication of transferability of other courses. With proper planning, a student should be able to transfer the first year of credit (approximately 34 credit hours) from junior colleges.

Transfer course equivalency for Arkansas schools and some foreign institutions can be found on the web at: <http://registrar.uark.edu/438.php> through the "Transfer Course Equivalency Guides" link.

Students transferring from four-year colleges that do not possess ABET accredited civil engineering curricula, especially those without Articulation Agreements, should be able, with proper planning, to transfer 68 credits. Ideally, the student should complete the last 4 semesters in residence at University of Arkansas, Fayetteville. Students planning to transfer credit from non-ABET accredited programs must be sure to take courses in the sequence appropriate to that of ABET-accredited programs. Otherwise both the quality of the student's education and the continued accreditation of our program may be jeopardized.

The Civil Engineering Department participates in the College of Engineering Freshman Engineering Program and therefore students entering the COE as a transfer freshman are initially designated as either Pre-Engineering or General Engineering depending on their academic qualifications. After completing the requirements for the Freshman Engineering Program, the student may be accepted in the civil engineering program. (See Appendix C for details on the Freshman Engineering Program).

POLICY ON TRANSFER CREDIT

- Courses similar in content to those listed for the first four semesters of the civil engineering curriculum at the University of Arkansas, Fayetteville will be accepted for transfer credit from non-ABET accredited programs providing:
 - The course is listed as a freshman or sophomore course in Articulation Agreements between UAF and the college from which transfer credit is requested, or
 - The transfer work has similar prerequisites to those of the equivalent courses at UAF and the courses have been taken in the order required by ABET accredited programs. (For example, Physics and Engineering Science courses must be calculus-based and calculus must be taken as a prerequisite or co-requisite to these courses.)
- Intermediate level engineering science courses (3000-level, third semester) completed at four-year institutions may be transferred provided that the content is substantially equivalent to that listed for the UAF course for which transfer credit is requested and the appropriate prerequisites have been completed as required by ABET accredited programs. Equivalence is established by the course prerequisites, the textbook used, the course outline, and/or the nature of the program for which transfer is requested. (Courses in this category include Dynamics, Mechanics of Materials, Structural Analysis, and Surveying Systems.)
- Credit for upper level engineering science (3000-level) may be granted upon satisfactory performance on a written or oral Advanced Placement examination conducted by a UAF faculty member. The purpose of this examination is to ensure that the student has adequate knowledge to understand the material to be covered in subsequent senior-level courses. (Courses in this category include Hydraulics or Fluid Mechanics, Engineering Economics, and Hydrology.) As with other courses substantial equivalence of course content, prerequisites, and work requirements must be established. No more than 24 credit hours may be transferred by Advanced Placement examination.
- Humanities/social science electives can be transferred if they are designated as equivalent to Arkansas core curriculum requirements.

ADMISSION OF INTERNATIONAL STUDENTS

All students whose native language is not English must earn a score of **at least 550** on the TOEFL (Test of English as a Foreign Language) exam in order to be admitted to the College of Engineering or to take Engineering courses. All courses presented for transfer must be approved first by the International Admissions Office before they can be considered for transfer to the Civil Engineering Department curriculum.

ADDITIONAL INFORMATION

SCHOLARSHIPS AND FINANCIAL AID

A number of scholarships and additional financial aid are available for those who demonstrate an excellent academic record and/or established need. Application forms are available online at www.engr.uark.edu. While many scholarships are awarded from University funds, other awards are

made through college or departmental resources. There are a number of scholarships available each year from Civil Engineering, so interested applicants should inquire from the Civil Engineering Department regarding specific application procedures.

Applications must be submitted on approved forms by April 1st preceding the semester for which application is made. However, other scholarships become available for award at other times during the school year. Information regarding these is posted in the CVEG Student Study center as it becomes available. Contact the Department for forms and instructions.

MINORS IN OTHER COLLEGES AND SCHOOLS

Students in the College of Engineering may pursue academic minors in other colleges. For requirements regarding minors, check the Catalog of Studies listing for the department offering the minor. For example, a Mathematics minor can be obtained by only taking two classes (6 or 7 hours) beyond the CVEG math requirements. Other minors suggested for consideration are minors in business administration (approximately 20 to 21 additional hours) and/or sustainability (with proper planning only 9 hours outside the CVEG departmental requirements). Details on sustainability can be found at: <http://sust.uark.edu>. Students must notify the College of Engineering dean's office of their intent to pursue a minor.

STUDENT PROFESSIONAL ORGANIZATIONS

American Society of Civil Engineers — ASCE (Student Chapter)

The American Society of Civil Engineers (ASCE) has established and maintains over 170 student chapters in engineering colleges of recognized standing. Through these student chapters, the parent society keeps in touch with the education of young engineers to help them into the profession. Student chapter members may also become Student Members of ASCE. Information about joining can be found by attending a meeting or speaking with any ASCE student member or the faculty adviser, Dr. Kevin Hall. Through the student chapter, students in ASCE have an opportunity to develop their own careers through association with active leaders in civil engineering. They can become aware of technical progress as they attend the student chapter meetings, which are held monthly throughout the school year, and presentations of current engineering projects. Of greater importance, they can become acquainted with their classmates and the teaching staff as they participate in the activities of the student chapter.

Chi Epsilon

Chi Epsilon, the civil engineering honor society, was formed to recognize the characteristics of the individual civil engineer deemed to be fundamental to the successful pursuit of an engineering career and to aid the development of those characteristics in the civil engineering student. Members traditionally strive to be of service to civil engineering students and the Department. To be considered for membership, civil engineering students must have completed one-half their work toward the BSCE degree and rank in the upper third of their class. Dr. Norm Dennis is the faculty adviser for Chi Epsilon; his office is located at Bell 4144.

Other Organizations

Several other student organizations at the college level are available for civil engineering students.

Tau Beta Pi, a national honorary scholarship society, and Theta Tau, a national professional engineering fraternity that maintains a chapter house on the campus, are available for membership by invitation and are active in University of Arkansas and the College of Engineering affairs. Other student chapters

affiliated with national societies that might be representative of particular interests are the national Society of Black Engineers, the Society of Women Engineers, the Society of Hispanic Professional Engineers, and the Society of Military Engineers.

The student governing group in the College of Engineering is the Engineering Council. It has representation from all the classes and organizations in the College.

The Arkansas Engineer, a quarterly student publication of the College of Engineering, is written composed, and published by engineering students. Those students who have an interest in technical journalism should actively seek a position on the Arkansas Engineer working staff.

Students within two academic terms of graduation may be inducted into the Order of the Engineer. The Order is the roster of engineers in the United States who have participated in an Engineer's Ring Ceremony and who have publicly accepted the "Obligation of the Engineer". For more information regarding The Order contact Dr. Rick Coffman (BEC 4156).

Students may also become student members of the National Society of Profession Engineers (NSPE). To join, contact Larry Weir at c.l.weir@sbcglobal.net

IS ABET ACCREDITATION REALLY IMPORTANT?

Faculty, students, legislators, and citizens — all are concerned about "engineering accreditation". Most of them have little to no concept of what accreditation is, but all agree that it is important to be "accredited". Perhaps this explanation of the accreditation process will be helpful to those who have such an interest.

The group that evaluates and accredits engineering degree programs (not universities nor colleges, but only programs) is ABET, Inc. This board was formed in 1932 and is primarily responsible for monitoring, evaluating, and certifying the quality of engineering and engineering-related education programs in the United States. ABET develops accreditation policies and criteria and conducts a comprehensive program of evaluation, granting accreditation to programs that meet the minimum criteria.

ABET's primary objectives are to stimulate the development of improved engineering education and to identify all those programs which meet the minimum criteria. A degree from an ABET-accredited program is an indication that it is a quality-tested program that is acceptable to all engineering registration boards.

ABET has three commissions that perform the accreditation functions — Engineering Accreditation Commission (for engineering programs), Technology Accreditation Commission (for technology programs), and Related Accreditation Commission (for related programs, such as surveying). All commission members are qualified program evaluators who are thoroughly knowledgeable of policies, procedures, and criteria.

ABET is governed by nineteen "participating bodies" that are major technical and professional engineering societies in the United States. They are represented on the board of Directors and the Accreditation Commissions by individuals who are from private, public, and academic sectors with a wide range of engineering disciplines. These participating societies represent over 700,000 individual

engineers. All Directors and commission members as well as the educators and practitioners who serve on the visiting evaluation teams are volunteers.

What are the criteria for accrediting programs in engineering? These criteria are intended to assure an adequate foundation in science, humanities and social sciences, engineering sciences, and engineering design. They are intended to be flexible enough for a program's individual qualities and ideals. In addition to the general criteria, there are program-specific criteria developed by the participating bodies that pertain to that particular discipline. The requirements noted here are for an undergraduate program. Additional criteria are utilized for graduate programs.

There are six elements to the general criteria. They are faculty, curricular objective and content, student body, administration, institutional facilities, and institutional commitment. Faculty refers to the size and competence of the faculty, the standards and quality of instruction, and some evidence of concern about improvement of instructional technique effectiveness. Student body relates to the admission, retention, and scholastic work of the students and the performance of graduates. Administration refers to the attitude and policy of the engineering administration toward teaching, research, and scholarly production (publications), plus the quality of leadership at all levels of administration in engineering.

Institutional facilities relate to the library support given to the engineering unit both in the amount of materials available and the accessibility of those materials. It also refers to the computer facilities used by students and faculty. Institutional commitment relates to the financial and philosophical dedication to the program in engineering. It is evidenced by the relationship of the program to the institution as a whole, by the fiscal policy and resources available, and the suitability of the facilities, including laboratories, libraries, and computer facilities.

Curricular objective and content is an area that is most visible to students and practicing engineers. ABET expects the curricular content to be at least three years in the areas of mathematics, basic sciences, engineering sciences, engineering design and the humanities/social sciences. Specifically, the coursework must include at least one year of mathematics and social sciences, one year of engineering sciences, one-half year of engineering design, and one-half year of humanities/social sciences. These must be integrated into a total educational program. Additional requirements include appropriate laboratory experience, computer-based experience, competency in oral and written communication, and an understanding of the ethical, social, and economic considerations in engineering practice.

ABET serves many groups, but it derives its prestige from the engineering community. It serves the public interest on behalf of the engineers; it derives its expertise from engineers; and it nurtures its vitality and technical competency from the continuing support of the engineering community. It is true peer evaluation.

ABET-accreditation is important because it indicates quality and commitment to engineering education excellence on the part of an engineering degree program.

APPENDICES

Appendix A	Policy on Academic Ethics
Appendix B	Freshman Engineering Program
Appendix C	CVEG Flow Chart
Appendix D	Degree Checklist

APPENDIX A

COLLEGE OF ENGINEERING
UNIVERSITY OF ARKANSAS
POLICY ON ACADEMIC ETHICS

INTRODUCTION

The purpose of this policy statement is to define and encourage a uniform application of rules and regulations regarding academic ethics throughout the College of Engineering. Unethical conduct undermines the pursuit of the educational goals of this institution and erodes the honor, ability, and reputation of its graduates. This policy is intended to promote an academic climate wherein the full potential of each student can be realized and recognized.

CODE OF ETHICS

Every student in the College of Engineering is obligated to comply with pertinent provisions of the Code of Ethics* applicable to professional practice following graduation. The Code requires “honesty, impartiality, fairness, and equity” and “adherence to the highest principles of ethical conduct.” Most particularly, it states that engineers shall:

- A. Be objective and truthful in professional reports, statements, or testimony
- B. Not falsify or permit misrepresentation of their...academic or professional qualifications
- C. Give credit for engineering work to those whom credit is due
- D. Not compete unfairly with other engineers by attempting to obtain employment or advancement...by improper or questionable means
- E. Avoid any act tending to promote their own interest at the expense of the dignity and integrity of the profession

EXAMPLES OF UNETHICAL CONDUCT

Pursuant to these provisions, the faculty of the College considers the following to be specific examples of unethical conduct:

- A. Submission, as one’s own, of any work prepared totally or in part by someone else
- B. Plagiarism—that is, the unacknowledged incorporation of another person’s work, either verbatim or in substance, in work submitted for credit
- C. Unauthorized collaboration with another person in preparing work submitted for credit
- D. Unauthorized submission, for credit, of work previously credited in another course
- E. Unauthorized alteration on work submitted for re-grading
- F. The use of unauthorized materials or aids during examinations
- G. Copying from the examination paper of another student, giving aid to, or seeking aid from, another student during an examination
- H. Using, obtaining, or attempting to obtain by any means the whole or any part of an un-administered examination, or of information pertaining thereto
- I. Taking or attempting to take an examination for another student, or allowing another student to take or attempt to take an examination for oneself
- J. Any conduct expressly stated to be unethical by the instructor in a particular course
- K. Aiding, abetting, or condoning unethical conduct on the part of another student

Strict adherence to the foregoing is a requirement for graduation from the College of Engineering.

* National Society of Professional Engineers, "Code of Ethics for Engineers," NSPE Publication No. 1102, as revised July, 1981.

CONDUCT FACULTY RESPONSE TO ACTS OF UNETHICAL CONDUCT

- A. Upon becoming aware of unethical conduct, the faculty member should:
- B. Collect and/or prepare appropriate documentation of the act. Examples of suitable documents are (1) reproduced copies of examinations, papers, or reports which establish unethical conduct; (2) signed written statements regarding unethical conduct by another student (This means may be used by a student to initiate action in case of unethical conduct)
- C. Inform the student of any action to be taken in response to unethical conduct. Possible actions include (1) reduction of grade. The faculty member may decide to reduce the grade of a particular test or assignment, or assign a failing grade for the course; (2) request the College of Engineering Academic Ethics Board to rule that a student does not meet the requirements for graduation.
- D. Submit a report to the College of Engineering Academic Ethics Board and give a copy of the report to the student(s) involved. Copies of documentation should accompany the report submitted to the Board. (The report will provide protection against repeated offenses in different courses).

COLLEGE OF ENGINEERING ACADEMIC ETHICS BOARD

- A. Function of the Board: The purpose of the Academic Ethics Board is to review the academic ethics reports submitted by faculty members and any record of previous infractions. When the circumstances warrant, the Board can, by a two-thirds vote, rule that the student does not meet the requirements for graduation from the College as set forth in the Engineering catalog. (The Board can specify conditions under which the requirements might still be met.)
- B. Composition of the Board: The Board shall be made up of six tenured Engineering faculty members and two students. The faculty members in each department of the College of Engineering shall elect one person from the faculty in their department to serve on the Board. Except for the initial Board, each Board member shall serve a two-year term. For the initial Board, members shall have terms according to the following schedule: Agricultural Engineering, 1 year, Chemical Engineering, 1 year; Civil Engineering, 1 year; Electrical Engineering, 2 years; Industrial Engineering, 2 years; and Mechanical Engineering/Engineering Science, 2 years. The Student Engineering Council will appoint the student members to serve staggered, two-year terms.

APPEALS

A student who wishes to appeal a decision made by a faculty member or by the College of Engineering Academic Ethics Board may utilize existing University academic grievance procedures.

IMPLEMENTATION OF POLICY

- A. A copy of the Code of Ethics will be printed in the catalog of the College of Engineering
- B. The faculty member in each course may choose to modify specific constraints printed in the catalog. If so, the students should be notified in writing of any more stringent requirements.
- C. The general statement will be discussed in some detail with each Orientation (GNEG 1001) class early in each semester

APPENDIX B

FRESHMAN ENGINEERING PROGRAM

All new freshmen entering the College of Engineering and all transfer students entering the College of Engineering with less than 24 credit hours are initially designated as either General Engineering or Pre-Engineering students. All General Engineering and Pre-Engineering students participate in the Freshman Engineering Program (see the section below on Majoring in Chemical Engineering for a possible exception). The objective of the Freshman Engineering Program is to establish the foundation for the academic and professional success of new students entering the College of Engineering by:

- delivering to them appropriate educational content so that they can move on to a discipline-specific College of Engineering undergraduate program,
- facilitating the development of their academic skills so that they understand the workload, professionalism, and ethics required to succeed in a rigorous academic environment, and
- providing them with academic, career, and personal advising in a proactive manner.

The Freshman Engineering Program is comprised of two sub-programs: the Freshman Engineering Academic Program and the Freshman Engineering Student Services Program. These programs work together to meet the objective of the Freshman Engineering Program.

To become a General Engineering student, a new student must: (i) be placed into MATH 1285: Pre-calculus Mathematics or higher, and (ii) not be placed into ENGL 0003: Basic Writing. New students who do not meet these requirements are designated as Pre-Engineering students, and they may only become General Engineering students when they: (i) have a University of Arkansas GPA of 2.0 or higher, and (ii) have rectified the deficiencies that prevented their becoming General Engineering students upon entry into the program.

FRESHMAN ENGINEERING ACADEMIC PROGRAM

The Freshman Engineering Academic Program is a two-semester program for General Engineering students. The coursework content of this program is as follows:

Fall Semester

GNEG 1111	Introduction to Engineering I	1
ENGL 1013	Composition I	3
MATH 2554	Calculus I	4
CHEM 1113	University Chemistry for Engineers	3
PHYS 2054	University Physics I	4
		<i>15 total credit hours</i>

Spring Semester

GNEG 1121	Introduction to Engineering II	1
ENGL 1023T	Technical Composition II	3
MATH 2564	Calculus II	4
	Freshman Engineering Science Elective	4
	Humanities/Social Science Elective	3
		<i>15 total credit hours</i>

The Freshman Engineering Science Elective require students to take PHYS 2074: University Physics II. For new students who are placed into MATH 1285, the MATH 2554 and PHYS 2054 requirements

shift to the spring semester, the Humanities/Social Science Elective requirement shifts to the fall semester, and PHYS 2074 is removed as an option for the Freshman Science Elective. These students are encouraged to complete MATH 2564 during the summer prior to their sophomore year.

Students who enter the Freshman Engineering Program with credit for or exemptions from one or more of the required courses in the Freshman Engineering Academic Program (or other courses required by College of Engineering undergraduate programs) are advised on a case-by-case basis and given the opportunity to choose advanced, replacement courses that are appropriate for any College of Engineering undergraduate program or for a program that they are seriously considering. However, ENGL 1013: Composition I and ENGL 1023T: Technical Composition II are closely coordinated with the Introduction to Engineering course sequence. Therefore, General Engineering students are encouraged to complete the Composition sequence regardless of their academic background. For a detailed description of the Freshman Engineering Program see the University of Arkansas Catalog of Studies.

NO EXCEPTIONS

CVPEG PROJECT ELECTIVES HAVE CO-REQUISITE DESIGN COURSES
These are true co-requisite classes NOT dual-requisite classes

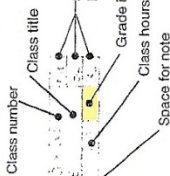
YOU CAN ONLY TAKE THE PROJECT ELECTIVE IN THE FALL. FOR:
CVPEG 4243 Foundations & OR CVPEG 4423 Geomatics Design

YOU CAN ONLY TAKE THE PROJECT ELECTIVE IN THE SPRING FOR:
CVPEG 4243 Environmental Design & OR CVPEG 4323 Design of Structural Systems

ALL CVPEG courses require a grade of "C" or better in all prerequisite courses.

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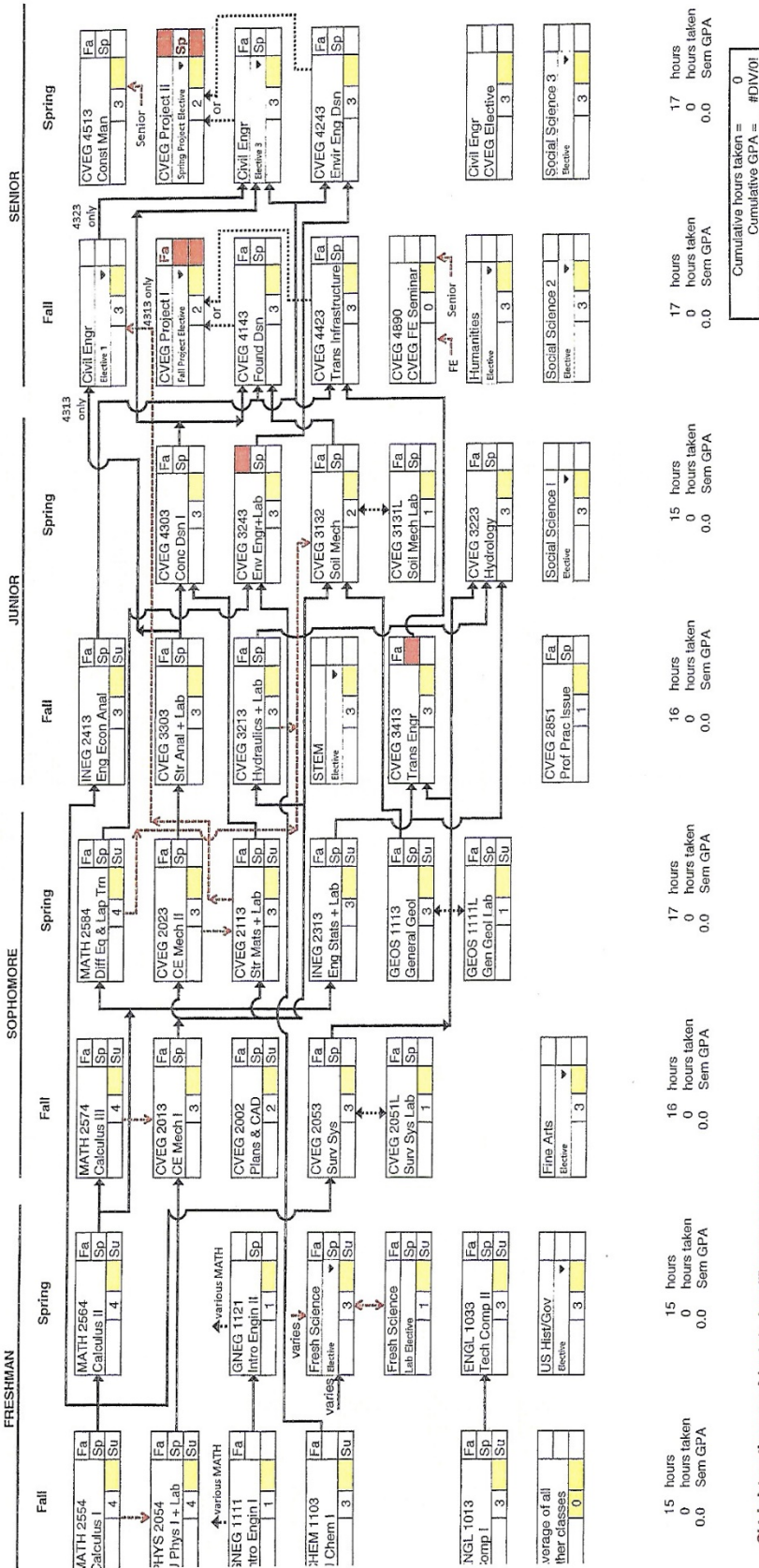
Department of Civil Engineering



Prerequisite (trace the line back to the prereq)

Dual requisite (prerequisite or corequisite - trace the line back to the dual req)

Corequisite (trace the line back to the coreq)



Obtain interactive spreadsheet at: <http://flowchart.cvepg.usmfc.edu/>

APPENDIX D

Degree Check List (Civil Engineering 2016-2017)

Last	First	Middle	Student ID / P-Number	Advisor									
Graduation Date	Key:												
	Spr	Sum	Fall	Year									
Required Courses - 98 cr	Sem	A	B	C	D	T	Comments & Transfer Info. Course/School	Math	Sci	Engr Sci	Engr Des	Hum Soc	Other
ENGL 1013 Composition I	0												3
CHEM 1103 U Chem I	0							3					
PHYS 2054 Univ Phy I	0							4					
MATH 2554 Calculus I	0							4					
GNEG 1111 Intro Engr I	0									1			
	0												
ENGL 1033 Tech Comp II	0												3
Freshman Science	0						Elective	3					
Freshman Science Lab	0						Lab Elective	1					
MATH 2564 Calculus II	0							4					
GNEG 1111 Intro Engr II	0									1			
	0												
CVEG 2053 Surveying Syst	0									3			
CVEG 2051 Surv Syst Lab	0									1			
MATH 2574 Calculus III	0							3					
CVEG 2015 CVEG Mechanics	0									4.5	0.5		
CVEG 2002 Plans and CAD	0									2			
	0												
INEG 2313 Engr Statistics	0							3					
GEOL 1113 Gen Geology	0								3				
GEOL 1111L Gen Geol Lab	0								1				
CVEG 2113 Struc Materials	0									2.5	0.5		
MATH 3404 Diff Equations	0							4					
CVEG 2851 Prof Pract Issues	0										1		
	0												
CVEG 3413 Transp Engr	0									2	1		
CVEG 3213 Hydraulics	0									2	1		
CVEG 3133 Soil Mechanics	0									3			
CVEG 3131 Soil Mech Lab	0									1			
CVEG 3223 Hydrology	0									2	1		
CVEG 3304 Struct Analysis	0									4			
	0												
CVEG 3243 Envir Engr	0									1	2		
CVEG 4143 Found Engr	0									1	2		
CVEG 4303 Rein Concrete I	0										3		
CVEG 4423 Geometric Design	0										3		
INEG 2413 Engineering Econ	0									2	1		
	0												
CVEG 4243 Env Engr Design	0										3		
CVEG 4513 Constr Mgmt	0									3			
CVEG 4872 Design Elective I	0						Fall Project Elective				2		
CVEG 4872 Design Elective II	0						Spring Project Elective				2		
	0												
	0	0	0	0	0	0	Totals	18	15	36	23	0	6

Technical Electives -12 Cr.	Sem					Comments & Transfer Info. Course/School	Engr Engr Hum					
	A	B	C	D	T		Math	Sci	Sci	Des	Soc	Other
1. Elective	0					STEM Elective						
2. Elective 1	0					CVEG Elective						
3. Elective 0	0					CVEG Elective						
4. Elective 3	0					CVEG Elective						
		0	0	0	0							

Humanities and Social Science Electives - 18 Cr.

1. Elective	0					Fine Arts						3
2. Elective	0					Humanities						3
3. Elective	0					Social Science1						3
4. Elective	0					(Hist/Gov)						3
5. Elective	0					Social Science2						3
6. Elective	0					Social Science3						3
7.												
		0	0	0	0							

Courses to be completed after degree check:

1. _____	8. _____	Other: _____
2. _____	9. _____	_____
3. _____	10. _____	_____
4. _____	11. _____	_____
5. _____	12. _____	_____
6. _____	13. _____	_____
7. _____	14. _____	_____

Exit Interview Completed _____

Curriculum requirements completed subject to satisfactory completion of courses listed above:

Advisor's Signature

Date

Student's approval of above degree requirements:

Student's Signature

Date

GENERAL UNIVERSITY REQUIREMENTS (Checked and approved by Dean's Office)

Credit Hour Totals: (128 required)	A	B	C	D	T	Curriculum GPA: ###
	0	0	0	0	0	
Total Credits: 0	UAF-GPA: _____		Core Requirements - satisfied? _____			
American History / Gov. fulfilled? _____	Hours of "D"? 0		Percent of total UAF hours? ###			
Is student on probation? _____						

CLEARED FOR GRADUATION:

Signature

Date